Instruction Manual for **SHIMPO INSTRUMENTS**

SHIMPO Data-Pro

WELCOME

...and thank you for purchasing your Shimpo Data-Pro. Keep these instructions handy to help you learn about all the features in the program. We recommend you read the sections *Getting Started* and *Recording Measurements* to get going. If you have never used a Palm computer, please read *Using a Palm Computer*.

While Shimpo strives to release high quality products, whenever you are trying to interconnect different pieces of hardware there is always the potential for problems. If you encounter a problem please try using the *Trouble-shooting* section. Our technical support will also work hard to resolve any problems that arise. The contact information is located on page eight (8).

Once again, thank you for your purchase and if you have questions please call or visit us at **www.shimpoinst.com**.

GETTING STARTED

In your new Shimpo packet you will find a Shimpo Data-Pro port module, and a Shimpo software CD.

Before you begin, make sure you have the following items:

1. **A compatible Shimpo gauge**
   - FGV digital Force Gauge
   - FGV-HX digital Force Gauge
   - DFS digital Force Gauge
   - DRI digital Force Gauge

2. **A cable for your gauge**
   - FGV Gauge needs FGV-RS232
   - DFS Gauge needs DFS-RS232
   - DRI Gauge needs DFS-RS232

3. **A Palm computer running Palm OS 2.0 or greater with at least 150K of free memory**

4. **A PC running Windows 95/98 or NT with 10 MB of free hard drive space and 16 MB of RAM**

5. **The Palm Desktop software installed on your PC**
   NOTE: Shimpo Data-Pro can be used with competitor gauges with RS232 output.

To start using Shimpo Data-Pro install the Shimpo software from the CD-ROM onto your hard drive. Follow the instructions on the screen for installing the software onto your PC, and Palm computers.

Once you complete the software installation, connect your gauge to the Shimpo Data-Pro port hardware module using your cable.

Plug the Shimpo Data-Pro port into your Visor Handspring. On HandSpring Visors, slide the plastic cover of the back and insert the Shimpo Data-Pro cartridge into the slot.
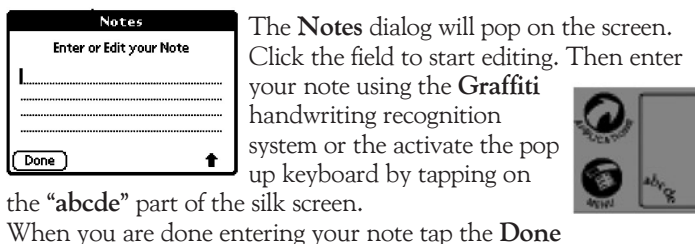
Turn on your Palm computer, and tap the **Applications** button (see *Using a Palm Computer*.) Then tap the Shimpo icon with your stylus and you are ready to start collecting data.

RECORDING MEASUREMENTS

Once you have setup the Shimpo Data-Pro's port, taking a reading from the gauge is very easy. The most convenient way is to tap the **Gauge Read** button on your Visor Handspring, or you can tap the **Notepad** button on the bottom right corner of your Palm computer to record a measurement. You should hear a beep on the Palm computer when a measurement is graphed on the screen.

ADDING A NOTE

You can add a note to any measurement. The first step is to select a measurement (see Editing Data: Selecting a measurement.) Then click the **Note** button (Note) on the bottom of the screen.

The **Notes** dialog will pop on the screen. Click the field to start editing. Then enter your note using the **Graffiti** handwriting recognition system or the activate the pop up keyboard by tapping on the "abcde" part of the silk screen.

When you are done entering your note tap the **Done**
button on the **Notes** dialog. If you are using the pop up keyboard you have to tap the **Done** button on the keyboard before you can tap the **Done** button on the **Notes** dialog. If you enter a non-empty note, a **Note icon** ◾ will be placed next to the measurement on the graph.
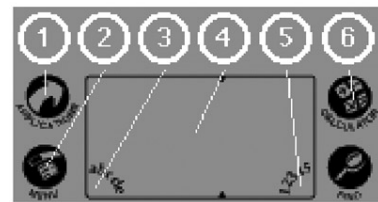
USING A PALM COMPUTER

In this section we cover some basic information about using Palm computers. You can find more complete information in the manual that came with your Palm computer.

Basic Interface

The Palm screen is touch sensitive. You select objects by tapping gently on the screen using your stylus. Drag the stylus over a field to change what's currently in there, using either **Graffiti** or the "**123**" Number keypad.

Silk Screen

Several special functions are located on the silk screen:

1. The **Applications** button pops up a screen of all the programs on your Palm computer.
2. The **Menu** button activates the drop down menus at the top of the screen.
3. To bring up the **keyboard** tap under the "**abcde**"
4. Enter text using **Graffiti** (see Palm manual for more information)
5. To use the numeric key pad tap the "**12345**"
6. The **Calculator** button brings up a simple calculator on the Palm screen.

HotSync Technology

To move data from the Palm computer to the desktop, place your Palm computer in the cradle. Then press the **HotSync** button. The data will be automatically moved to the PC.

NAVAGATING AROUND DATA-PRO
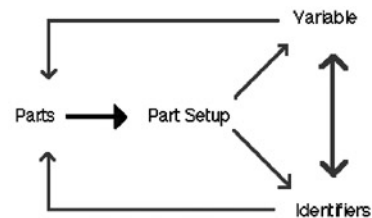
Parts screen:
> Tapping on a **Part** in the list brings you to the **Part Setup** screen. You can bypass the **Part Setup** screen by selecting that option under the **Interface Options** screen. (See *Interface Options*.)

Part Setup screen:
> Tap the **Collect Data** button to go to **Variable** or **Identifier** screens. The other controls on this screen let you configure the part. (See *Building a Part and Part List* for more information.)

Variable screen:
> Tapping on the **Parts** button brings you to the **Parts**

Setup screen. Use the pop up menu below the **Parts** button to go to other variables or the **Identifier** screen. (See the *Variable Options* for more information.)

Identifiers screen:

Tapping on the **Parts** button brings you to the **Parts Setup** screen. Use the pop up menu below the **Parts** button to select a **Variable**. (See *Identifiers* for more information.)

EDITING DATA

Any measurements that have not been synced with the PC can be edited on the Palm computer. Once a measurement has been synced you can no longer edit its value on the PC.

Continuous, Peak or Average Readings

IMAGE 1

1. If a similar device is already defined, select it from the list (*image 1*). Data-Pro software will use those settings as the defaults for your new setup. Now tap **Next**.

2. Check your device manual for the correct RS232 settings. You might find the settings written in a format like 19200, 8, N, 1, which means 19200 baud, a data length of 8, no parity and 1 stop bit. Some devices allow you to change the default settings. As a rule we recommend you stick with their defaults. Go ahead and configure Data-Pro software with the correct settings (*image 2*) and tap **Next**.

IMAGE 2

3. If you want the Visor to request data from the device select **Yes** (*image 3*). A lot of devices don't support this capability yet.
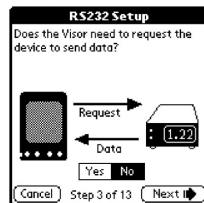
IMAGE 3

Now tap Next. We have found some battery powered devices have their RS232 ports turned off by default. Make sure you turn it on before sending data. Now tap **Next**. (Enter commands: **BA(cr)** Single, **BE(cr)** Peak, or **BB(cr)** Conrinuous [10 samples/ sec.])

4. To check everything is configured correctly Data-Pro software will test your setup (*image 4*). If everything looks fine tap **Next**.
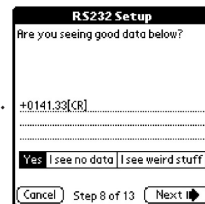
IMAGE 4

5. Data-Pro software expects your device to send back ASCII characters. The program

IMAGE 5

offers 3 different methods for detecting the end of a measurement (*image 5*). In this case the delimiter [CR] or carriage return is used.

6. Finally you can name this setup for future reference (*image 6*). You can save the setups to the PC, and download them to other Visors. Congratulations! You are now ready to start collecting data.
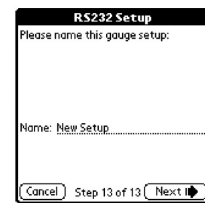
IMAGE 6

Selecting a measurement

You must select a measurement before you can edit it. The **active measurement** always has the **active** marker ▬ underneath it (see *The Graph*). There are three ways to select measurements. First, you can tap on a measurement in the graph. Second, you

can use the **left** / **right arrows** ◀▶ to move the previous and next measurement. Third, you can use the **up** / **down** button(s) ▤ on the bottom of your Palm computer to select the next and previous measurement.

Changing the value

Once you have selected a measurement, record you new value by reading a new value from the gauge, or by tapping the Data **1,2,3** button. (1,2,3)
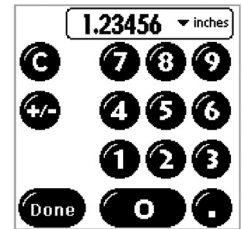
You can clear the value and type a new one on the keyboard. Select digits by tapping and dragging the stylus over them.

You can then replace them using **Graffiti** or the "**123**" Number keypad.

Deleting the measurement

To delete the active measurement, activate the menus by tapping the **Menu** button on the **Silk Screen** (See *Using a Palm Computer*). Then select **Delete Point** from the **Edit** menu.
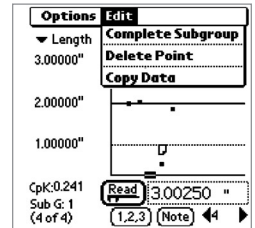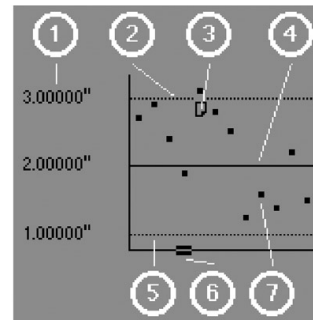
Notes

To edit or add a **Note** for the active measurement, tap the **Note** button (Note). (For more information, see *Editing Data: Notes*.)

THE GRAPH

Use the graph to view the measurements you have collected.

1) **Tick labels:** Control these in the Variable Options dialog. See "Variable Options: Setting Spec Limits" for more information.
2) **Upper Spec Limit (USL):** See 1.
3) **Note:** A measurement with a note. Tap on the note to view or edit the note.
4) **Target Value:** See 1.
5) **Lower Spec Limit (LSL):** See 1.
6) **Active Marker:** The black square shows the currently active measurement. All editing operation always take place on the active measurement.
7) **Measurement:** A measurement that has been entered.

Parts button: Tapping on this button brings you to the Parts list.
Gauge Read button: Tap this to read a measurement from the gauge or use the Notepad button on the bottom right corner of the Palm computer.
1,2,3 button: This button makes the Data Entry Screen pop up allowing you to manually enter the measurement value.

THE GRAPH (CONT.)
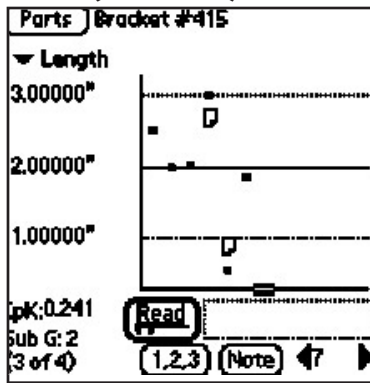
Sample Counter: This allows you to see how many measurements you have taken since the last time you transferred data to the PC.

Readout Window: To see the gauge readout more clearly and to aid in editing data points, a pop up window shows the last measurement in a large font.
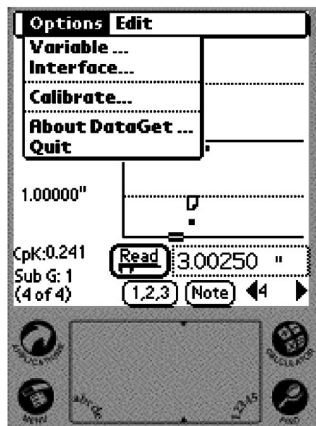
CpK Value & Subgrouping Counter: When you turn on the Subgrouping, a **CpK** value is instantly calculated providing instant visual feedback about your process, as you collect data. DataGet also keeps track of the Subgroup unit you are currently measuring.

VARIABLES

Variable Options: Setting Spec Limits, Alarms, Gauge Types, Naming the Variable

You can record data for up to 1000 variables per part. Each variable also has its own graph. You can set individual spec limits for each variable. From the main screen, activate the menu by tapping the **Menu** button on the **Silk Screen** (For more information, see "Using a Palm Computer.") Select **Variable...** from the **Options** menu. The **Variable Options** dialog will open.

You can turn on and off the **USL, LSL,** and **Target** value with the check boxes on the left-hand side of the screen.
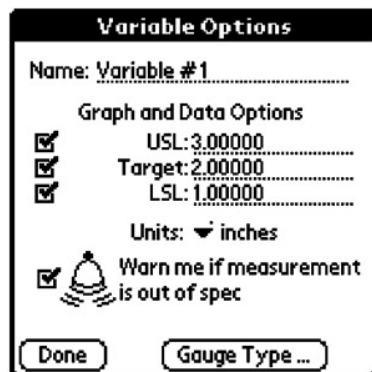
To change the value of the **USL**, for example, tap the **Number** field. To enter a new value, drag the stylus over the field to change its value using either **Graffiti** or the **"123"** Number keypad. (For more information, see *Using a Palm Computer*.)


If you want to hear an **alarm** and be prompted for a **Note** when a point is out of spec, select the "**Warn me if measurement is out of spec**" check box.

To change the gauge type, tap on the **Gauge Type** button and select from the drop down menu. Some gauge types (Fowler, Starrett, Ohaus, LMI, and JSResearch) need additional hardware.
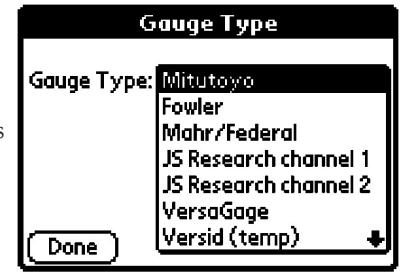
BUILDING A PART & PARTS LIST

To create a **Part** from which to collect data, click on the **New** button in the **Parts** screen. This brings you to the **Parts Setup** screen.
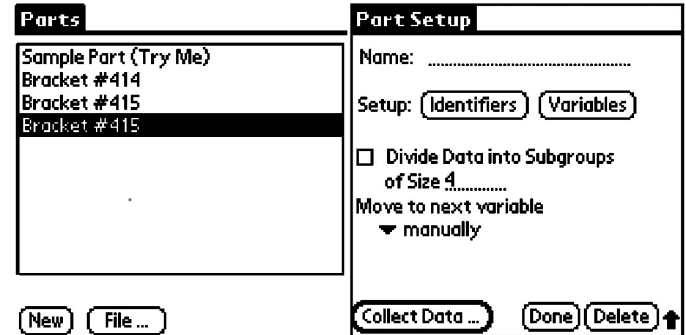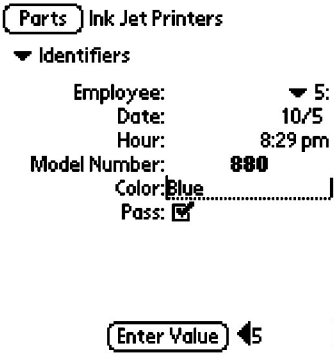

1) **Part Name.** Drag the stylus over the name field to change the Name. Enter the new value, using either **Graffiti** or the "**abc**" keypad. (For more information, see *Using a Palm Computer*.)
2) **Identifiers** button. This brings you to the **Identifier Setup** screen to collect attribute data. (See *Identifiers*.)
3) **Variables** button. This brings you to the **Variables** list, which allows you to add new variables and/or set data collection options (See **Variable Options** screen.)
4) **Subgrouping.** Tapping on the check box activates the **CpK** calculation, which is shown on the lower left-hand corner of the **Variable** data collection screen.
5) **Move to next variable.** Use the VariCycle™ technology to automatically advance to the next item. For example, if you record all the measurements for one sample before moving to the next sample, set DataGet to advance to the next variable after **after each measurement**. On the other hand, if you collect one variable at a time, within a subgroup your switch from **manually** to **after completing a subgroup** in the pop up menu. You can override these settings by **manually** switching between variables.
6) **Collect Data.** Clicking on this button brings you to the **Variables** data collection screen.

IDENTIFIERS

Now you can track job number, shift or employees using Identifiers. There are six different types of identifiers to ensure fast accurate data collection. For example the **numeric** type has a large keypad to enter values as you would in a calculator. The **pop up menu** options let you predefine a list of choices.

To change the value for one of the identifiers, tap on the right hand side of the row. The row will activate and you can edit its value. To save the screen, tap the **Enter Value** button. If you do not want to save the changes you have made, just switch to

Parts | Ink Jet Printers
▼ Identifiers

Employee: ▼ 5:
Date: 10/5
Hour: 8:29 pm
Model Number: 880
Color: Blue
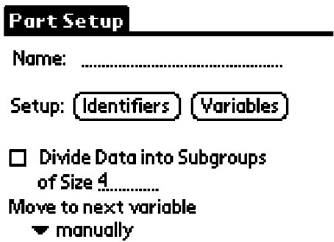Pass: ☑

Enter Value ◀5   ▶

a Variable without pressing the **Enter Value** button.

The **Arrow** buttons move backwards and forwards through the saved identifiers. You can edit any values that have not been synced with the PC. To save any edits, you must press the **Enter Value** button.

Use the pop up menu under the **Parts** button to move to another **Variable**, and use the **Parts** button to go to the **Parts** screen.

Setting Up Identifiers

Part Setup

Name: ....

Setup: (Identifiers) (Variables)

☐ Divide Data into Subgroups
   of Size 4 ....
Move to next variable
   ▼ manually

(Collect Data ...)   (Done)(Delete) ▲

To configure the identifiers for a part, go to the **Part Setup** screen (See *Navigating Around Data-Pro* for how get to there.)

Tap the **Identifiers** button to bring up the **Identifiers Setup** dialog to configure the identifiers for this part.

Identifier Setup

Identifier	Type	Options
Employee	Menu	(Edit...)
Date	Date	
Hour	Time	
Model Number	Numeric	
Color	Text	(Edit...)
Pass	Check	

(Done) (New) (Up) (Down) (Delete)

1) **New.** Select the **New** button to create a unique identifier.
2) **Up Down buttons.** These buttons are navigation buttons which allow you to rearrange the order of your **Identifier list**.
3) **Delete.** If you select **Delete**, the identifier and all data associated with this identifier will be deleted.
4) **Done.** This brings you back to the **Parts Setup** screen.
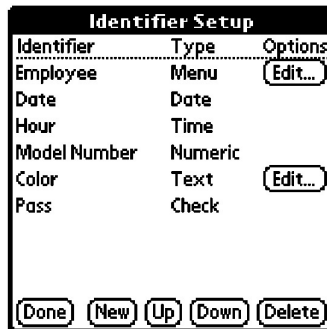
Example: Adding a pop up menu

New Identifier

Name: ....
Type: ▼ Numeric
(Set Attribute Options...)
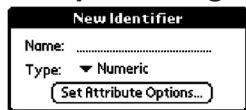
To add a pop up menu identifier tap **New** from the **Identifier Setup** screen. At the **New Identifier** dialog enter Employee, using either **Graffiti** or the "**abcde**" keyboard. (For more information, see *Using a Palm Computer*.)

Ne[Numeric
     Date
Name: Em[Time
Type: ▼ Text
     Popup Menu
Set [Check box

Select **Popup Menu** from the **Type** drop down menu. Tap on the **Set Attribute Options...** button to activate

Popup Identifier Options

(Done) (New) (Up) (Down) (Delete)

the **Popup Identifier Options** dialog.
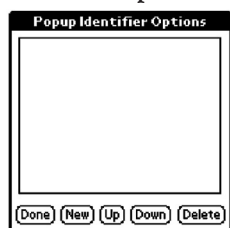
New Popup Menu Item
Menu Item: John
(Done)

Use the **New** button to add a choice to the menu. In this case we add John. Click the **Done** button on the **New Popup Menu Item** dialog to add the choice to the list.

Popup Identifier Options
John
Fred
Jane

(Done) (New) (Up) (Down) (Delete)
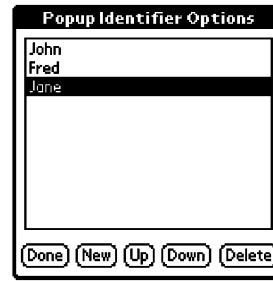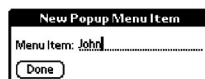
Press the **New** button again on the **Popup Identifier Options** dialog and add Fred. Finally add Jane. You should now have a screen that looks like the one on the right.
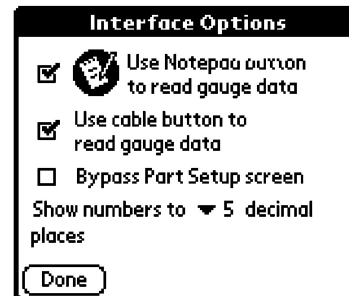
Press the Done button to go back to the **Identifiers Setup** dialog. Press the **Done** button again to return to the **Part Setup** screen.

Parts | Sample
▼ Identifiers
Employee: John
             Fred
             Jane

Enter Value ◀1   ▶
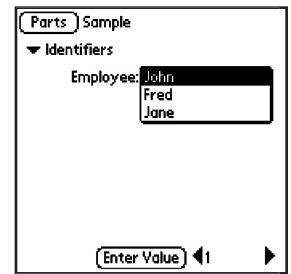
When you start collecting data for this part you will now have the **Identifiers** screen you see to the left.

INTERFACE OPTIONS

To make it easy to record information from your Shimpo Force Gauge or competitor gauges, Shimpo software uses the **Notepad** button on the bottom right hand side of the Palm computer. If you do not want to use the Notepad button to record values, activate the menus by selecting the **Menu** button on the silk screen (See *Using a Palm Computer* for more information.) Then select **Interface** from the **Options** menu.

Interface Options

☑ Use Notepad button to read gauge data

☑ Use cable button to read gauge data

☐ Bypass Part Setup screen

Show numbers to ▼ 5 decimal places

(Done)

Uncheck "**Use Notepad button to read gauge data**" In addition, the **data** button on cables and gauges can sometimes interfere with other Palm accessories. If you wish to disable it, just uncheck "**Use cable button to read gauge data**".

Bypassing the Part Setup screen

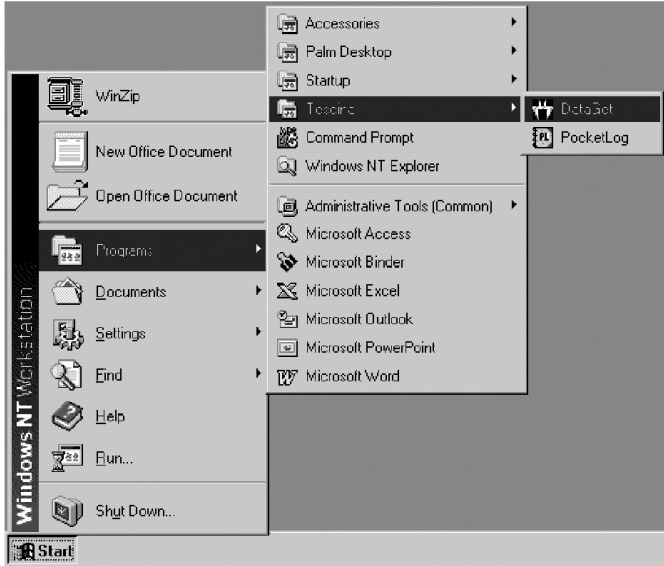If you would like to bypass the **Part Setup** every time you select a part from the **Parts** list, then check the "**Bypass Parts Setup screen**" under the **Interface Options** dialog. (See *Interface Options*.)

Adding a new user

HotSync the Palm you want to add with your PC. Launch the DataGet program on the PC (see *Saving Data to the PC.*) Select **Add a new user**, and then follow the instructions in the Wizard.
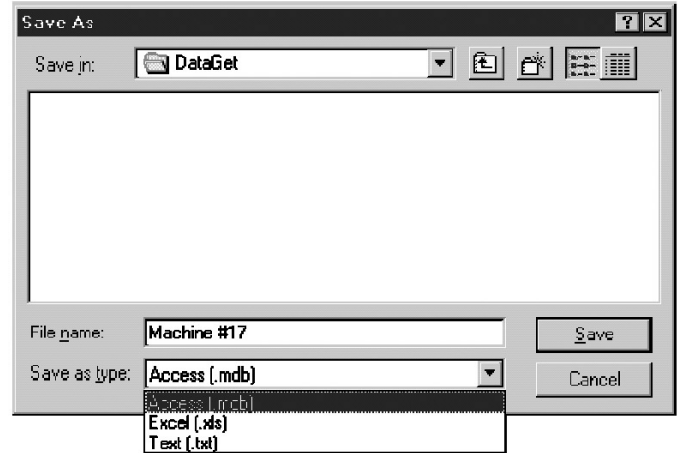
SAVING DATA TO THE PC

To change where you want to store files on the PC, Launch the DataGet program on the PC.

Select the **Save to a different file**.

Select the user you want to change the file for.
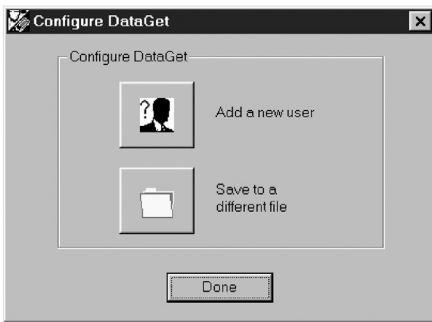

Click the **Next** button.

Click **Browse...** to change the file. Select the file (or type in a new file name) and select the type of file from the Save As Type drop down. Select **Save** to select this file. Select **Next** to move to the next screen of the wizard.

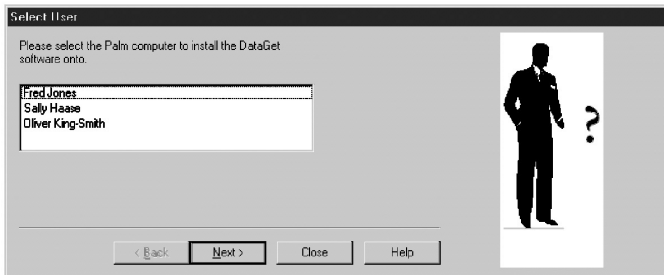The next time you hotsync the Palm computer, the data will be transferred to the new file.

PC TABLE FORMAT

When you transfer data back to the PC in Excel or text format, Each part is organized as a table. Here is a description of the columns:

Column	Description
User	Name of the user.
Session time	The time the data was sent to the PC.
< Identifiers >	One column for each identifier in the part.
< Variables >	If subgroups are off, each variable gets one column. If subgroups are on, each variable gets the subgroup size number of columns (e.g. if subgroup size = 5 there are 5 columns per variable).
Notes	Any notes for measurements on this row.

Microsoft Access Tables

When you transfer data back to the PC in Access format, the data is placed into 8 related tables. There is more information in this format than a flat table like Excel or text. For example, each measurement has a date and time stamp.

There are some example files on the CD. We strongly recommend you look at those before adding your own queries.
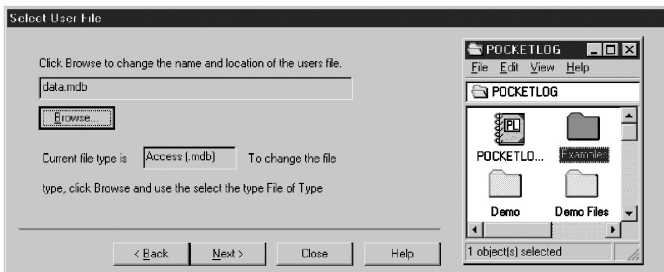
The following conventions are used in the tables. All fields marked in yellow are indexed. All fields marked in red are linked to other tables. The blue and gray markings are shown to help keep the rows separate.

All refcon fields are available for use. You may store any value in these fields. For example, if you are writing a script to extract data to another program, you can change the values of these fields to indicate the data has already been transferred.

What follows is a description of each table and the relationships between them.

Field	Description
data_id	A unique ID to identify each measurement.
variable_id	The variable for this measurement.
refcon	A free field for you to use.
row_number	If subgrouping is turned on, this is the sample in the subgroup. If subgrouping is turned off, this row is in the variable.
session_id	Identifies the session that recorded this measurement.
time	The date and time when the user recorded this measurement.
subgroup	The subgroup this measurement belongs to.
data_type	1 = standard measurement, 2 = blank point.
unit	The unit of this measurement.
double_data	The actual measurement.
out_of_spec	0 = No, 1 = Yes.

dg_data
The measurements from variables are held in dg_data.

Field	Description
note_id	A unique ID for each note.
data_id	The measurement associated with this note.
note_type	Not currently used.
freetext	The note text in unicode format.

dg_notes
Any notes attached to measurements are stored in the dg_notes table.

Field	Description
session_id	A unique ID to identify each session.
time	The date and time the data was synced with the PC.
user_id	The ID of the Palm computer which collected the data.
session_number	Incremented each time the Part Setup Info is changed on the Palm computer.

dg_session
Whenever a user syncs with the PC, a new session record is created in the dg_session table.

Field	Description
part_id	A unique ID to identify this part.
name	The name of this part
traversal_method	The VariCycle mode. manual = 5, variable to variable = 6, after each subgroup = 7.
subgroups	Are subgroups active?
subgroup_size	The size of the subgroup (if active)
session_number	Which session number was this part last modified on the Palm computer.
refcon	A blank field for your use. Store any information in here you want.

dg_part
Every time a new part is created, or an existing part is modified on the Palm computer, a new record is added to the dg_part table.

Field	Description
variable_id	A unique ID to identify each variable.
part_id	The variable belongs to this part.
index	The variable position in the part.
refcon	A free field you may store any information you like.
lsl_on	Is the lower spec limit on?
lsl_value	The lower spec limit value.
target_on	Is there a target value?
target_value	The target value.
usl_on	Is the upper spec limit on?
usl_value	The upper spec limit value.
unit	The default units of this variable.
alarm	Is the alarm set?
gauge_type	The type of gauge the values are recorded from.

dg_variable
All variables are given a unique entry into the dg_variable table. Every time a part is changed on the Palm, its variables are given new entries in this table.

Field	Description
identifier_id	A unique ID to identify each identifier.
name	The name of the identifier
part_id	The identifier belongs to this part
index	The position of the identifier in the part.
type	The type of identifier: numeric = 10, date = 11, time = 12, text = 13, pop up menu =14,
refcon	A free field you may store any information you like.

dg_identifier
Every identifier has a unique entry into the dg_identifier table. Every time a part is changed on the Palm, its identifiers are given new entries in this table.

Field	Description
identifier__data_id	A unique ID for this piece of data.
identifier_id	The identifier this data belongs to.
session_id	The session this data was record in.
subgroup	The subgroup this data belongs to.
identifier_value	The data value (in text format).
refcon	A free field you may store any information you like.

dg_identifier_data
Identifier data is stored in this table.

| Field	Description
user_id	The Palm computer this record belongs to.
name	Name of the Palm computer.
session_number	When was the part setup info last changed on the Palm computer.
refcon	A free field you may store any information you like.

dg_current_job
The last time the user changed the Part Setup info on the Palm computer is tracked in this table. If, at the start of the sync, the Palm has a higher session_number than this table, new parts, identifiers, and variables get added to their respective tables.

DUPLICATING PARTS DATA on the PC
(For Advanced Users)

By selecting "**Duplicate Part Setup info to PC**", you can duplicate your database to other Palm computers, so you only need to set up Part list once.

File Options

Saving Data on the PC

☐ Duplicate Part Setup info to PC

Data on Palm Computer

Delete After: ▼ 3 Sessions

[Purge Saved Data]

[Done]   [Tech Support ...]

From the **Parts** screen, select the **File...** button. This will bring up the **File Options** screen. Tap on the "**Duplicate Part Setup info to PC**." Then place your Visor Handspring in the cradle and press the **Hotsync** button on the cradle. Go to the PC and select the Palm **Install Tool**. Click the Add button to add the name of the PalmPilot user that you want to transfer the **Part setup** to from the User drop down list. Go to the Palm user's **Backup** directory of the PalmPilot you just hotsynced. Select the file called **DataGet_db.PDB**. Click the **Done** button. To complete the transfer of the Part setup information, just **Hotsync** the new PalmPilot.
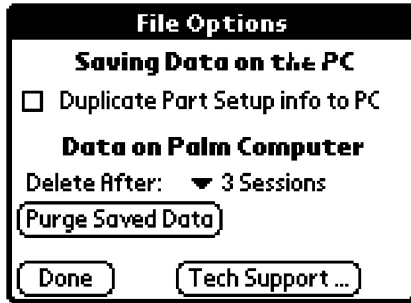
TROUBLESHOOTING

Installation

If you are having trouble installing the Shimpo desktop software please check the following items.
 • The Palm Desktop software has already been installed on your system. (*The software is located on the CD that came with your Palm computer.*)
 • Make sure the hotsync manager is running. You should see an icon on the task bar (the gray strip at the bottom of your screen) that looks like 🌀 or 🌀.
Then try reinstalling the software.

Reading values

If you receive an error dialog, like the one shown on the right, while trying to read values from the gauge, try these troubleshooting steps.

Error: The Palm computer cannot find the gauge.
If you get this error message every time you try to read a point:
 • Check that the gauge is turned on.
 • Check the cables are securely connected.
Clear the error message and try reading a measurement again. If the problem persists, check these additional items:
 • The cable is the correct type for your gauge. (*Note: calipers have a large range of different cables that are easily confused.*)
 • Try replacing the cable. Sometimes a wire can break inside the cable.

Error: The Palm computer is having trouble reading the data from the gauge.
If you get this error message every time you try to read a value:
 • Check that you are using the correct cable type.
 • The battery in the gauge is still good.

Gauge Error

The Palm computer is having trouble reading the data from the gauge.

Please make sure the connectors are clean.

[Done]
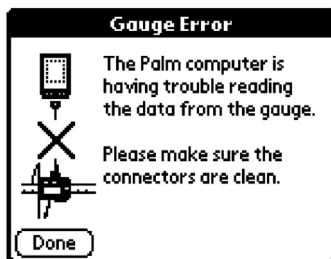
Error: The Palm computer does not understand the data format the gauge is using.
If you are receiving this error every time you try to read a measurement:
 • Check that the cable is the correct type.
 • Try switching cables.

If you are experiencing intermittent problems reading measurements from the gauge:
 • Check you are not trying to read measurements faster than every 2 seconds.
 • Battery level is still good in the gauge.

Hotsync Technology

If you are having trouble syncing with the PC, the HotSync log on the PC will have the error and error code. The error message will contain instructions on what to check.

CONTACT INFORMATION

You can reach us through any of the following methods:

phone:	630-924-73138 (8-5 pm) Central
FAX:	630-924-0342
email:	info@shimpoinst.com
website:	www.shimpoinst.com
address:	1701 Glenlake Ave., Itasca IL 60143

SPECIFICATONS

CARTRIDGE SPECIFICATIONS	
Display	160 X 160 touch screen
Connector	Standard DB9 male connector
ESD Protection	± 10kV
Max Software Speed	57.6Kbps
Typical power consumption	2mAPower consumption off
On board Buffer	128 bytes
Data Length	5,6,7,8
Stop bits	1,1.5,2
Parity	none,even,odd,one,zero
Flow Control	Hardware / Software
RS232 Pin Support	TXD,RXD,CTS,RTS,DTR,DSR,RI,CE,GND

SOFTWARE SPECIFICATIONS	
Max measurements per variable	2000
Significant digits per measurement	6
Range of Measurement	±20000
Mas measurement on 2MB Visor	50000
Max variables per part	100
Max identifiers per part	9
Max parts	100
Max RS232 setups	100
Force Measurement	oz,g,kg,N,lb
Communications	HotSync®
Operation Modes	Peak, average, single readings
PDA	Visor Handspring™ and others
PC Output	Time, Date, Folder, Force reading, Unit
RS232 Setup Option	Allows user to use cartridge with their NON-SHIMPO products

Compatible with: Shimpo FGV, DFS, & DRI digital force gauge series. Can be used with other metrology products which have RS232 output option.

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